**Supplemental Figure and Table Legends**

**Suppl Figure 1. Comparison of genes upregulated and downregulated by centrosome loss to other JNK signaling-related studies.**

The Venn diagrams display the overlap between the genes identified by our RNA-Seq data with those found in two other wing disc studies with known JNK activity. (A) For the upregulated genes, there were significantly more genes in common with our study and both of the other studies than one would expect by chance (Fishers exact test). The lists of those overlapping genes between studies are indicated, as are the 13 upregulated genes common to all three studies. (B) Similar results were found for downregulated genes, and the associated lists of shared genes are shown.

**Suppl Figure 2. Blocking apoptosis after centrosome loss activates JAK-STAT signaling.**

(A) In control wing discs (en>RFP only), JAK-STAT signaling appears active only in the outer, hinge region of the disc (blue arrow), based on expression of the 10xSTAT-GFP reporter. (B) Knockdown of *sas-4* (i.e., centrosome loss) in the posterior half of the wing disc (marked by en>RFP+), does not noticeably affect activity of the JAK-STAT pathway—notably, there is little activity in the wing pouch (red and green arrows). (C) However, when cell death associated with *sas-4* knockdown is inhibited by p35 misexpression, there is a significant increase in 10xSTAT-GFP expression, particularly in the wing pouch (red arrows). Interestingly, the largest increase in JAK-STAT activity is in wildtype anterior cells adjacent to the *sas-4* knockdown region (green arrows in C'). Scale bars=50µm. All images are maximum intensity projections.

**Supplemental Table 1. Global gene expression data in *sas-4* and *asl* mutants compared to WT.**

EdgeR results comparing RNA-Seq data from *sas-4* or *asl* mutants to WT control wing discs; sorted by FDR. *sas-4* and *asl* mutant data are located in separate Worksheets.

**Supplemental Table 2. Genes up and downregulated in *sas-4* mutant wing discs.**

List of genes and accompanying RNA-Seq data for genes significantly (FDR<0.001) up or downregulated in *sas-4* mutants, relative to WT; sorted by FDR. Upregulated and downregulated genes are on separate Worksheets.

**Supplemental Table 3. Genes up and downregulated in *asl* mutant wing discs.**

List of genes and accompanying RNA-Seq data for genes significantly (FDR<0.001) up or downregulated in *asl* mutants, relative to WT; sorted by FDR. Upregulated and downregulated genes are on separate Worksheets.

**Supplemental Table 4. Genes significantly upregulated in both *sas-4* and *asl* mutant wing discs.**

List of shared genes significantly upregulated in *sas-4* and *asl* mutants, relative to WT; sorted alphabetically.

**Supplemental Table 5. Genes significantly downregulated in both *sas-4* and *asl* mutant wing discs.**

List of shared genes significantly downregulated in *sas-4* and *asl* mutants, relative to WT; sorted alphabetically.